MATERIA MEDICA AND THERAPEUTICS.

The Anæsthetic and Diuretic Action of the Stigma of Corn.

Dr. DUCASSE has been employing an extract of the stigma of corn (*Stigmates de maïs*) in doses of from one to two grammes daily, in cases of chronic cystitis and gravel and nephritic colic with the most satisfactory result, as regards relief of pain and irritability of the urinary passages. He has also been able to confirm the following conclusions by Dr. Sandrieux of its diuretic properties. The latter found that when administered under any form, it causes in three or four days a marked increase in the quantity of urine, and that these effects were produced not only in diseases of the urinary organs, but also when the normal quantity of urine had been reduced from disturbance in the organs of circulation. It does not produce any disturbance of the nervous or digestive system, even when its administration in large does has been long continued.—*L'Union Méd.*, Dec. 7, 1882.

Physiological Action of Convallaria Maialis.

Dr. ISAAC OTT draws the following conclusions from an experimental study with this drug:—

1. That convallaria increases the arterial tension greatly at the same time as the heart begins to beat more frequently; that the heart begins to fail before the tension.

2. The decrease of cardiac frequency is not due to cardio-inhibitory excitation, but to an action on the heart itself, probably on its muscular structure.

3. The rise of arterial tension is mainly due to stimulation of other vaso-motor apparatus than the main monarchical vaso-motor centre.

4. The drug causes clonic spasms.

If we compare the action of this drug with digitalis, it is found that the slowing of the heart by each is due to different causes: with digitalis it is due to a cardio-inhibitory excitation; with convallaria some other part of the heart is acted on. Digitalis, as a rule, does not primarily accelerate the heart; convallaria does. After section of the spinal cord digitalis is powerless to increase arterial tension, whilst convallaria is not. If now we compare the action of this drug with other cardiac agents, as aconite, urechites suberecta, or astragalus mollisimus, it is found that it does not belong to this group. As aconite, urechites, and astragalus resemble each other in their action, yet many important differences exist, so does convallaria differ from digitalis in several important particulars. The great rise of arterial tension would indicate its value in dropsies, reasoning upon Ludwig's theory of renal secretion. It is a drug which must not be pushed to any great extent.—*Archives of Medicine*, Feb. 1883.

Chrysophanic and Pyrogallic Acids.

At the meeting of the New York Dermatological Society, held Sept. 26, 1882, Dr. P. A. MORROW formulated the following propositions:—

1. That chrysophanic acid is perhaps the most efficient agent known to the profession for the external treatment of certain cases of psoriasis, especially chronic cases which have resisted other methods of treatment.

2. That its range of application is limited; in children, in patients with sensitive, irritable skins, and in acute cases generally, it is contra-indicated.

3. That in psoriasis affecting the face and hairy scalp, its intensely irritating action, producing puffiness of the face and eyelids, and its discolouring effect upon the hair render its employment impossible.

4. That it is prompt in its action—a week or ten days' active treatment being usually sufficient to develop its full therapeutic efficacy.

5. That the curative effect is only temporary; it does not afford a safeguard against relapses.

6. That it probably acts only locally and by virtue of its irritating properties, setting up a substitutive inflammation, which modifies or corrects the tendency to the inflammatory overgrowth of epidermic cells.

7. That its employment is attended with certain objectionable results, some of which always follow its use, while others seem to depend upon idiosyncrasy, physiological and morbid predispositions, etc.

8. That a brownish, prune-juice discolouration of the skin which persists long after the application is discontinued, a reddish staining of the hair and nails, and an indelible dyeing of the clothing are inseparable from its use.

9. That the erythematous and furuncular inflammations which occasionally follow its use may be classed as incidental effects, as they do not always depend upon an excessive strength of the preparation employed, but are frequently manifest after a mild application—intense dermatitis resulting in exfoliation of the epidermis in large flakes, has been observed after an application of 10 grs. to the ℥j.

10. That the strength of the ointment recommended by Balmanno Squire (ʒij. to ℥j.) is excessive; a milder strength (20 grs. to ʒj. to ℥j.) being usually sufficient to develop the full therapeutical virtues of the drug.

11. That in other diseases for which it has been recommended, as acne, favus, chromophytosis, eczema marginatum, etc., chrysophanic acid possesses no advantages over certain other drugs which are commonly used.

12. That pyrogallic acid is a drug which is free from some of the more objectionable features of chrysophanic acid. It does not (in 10-per-cent. ointment) inflame the skin, it does not produce œdema of the face when applied to the scalp, and the discolouration is much less marked and permanent.

13. That it should nevertheless be used with caution, as pernicious results have followed its too free use. When freely used for two or three weeks, it produces an olive-green or tarry condition of the urine, with prostration, febrile disturbance, and other general symptoms.

14. That its curative action in psoriasis is much less rapid, but apparently more permanent than that of chrysophanic acid.

15. That its freedom from irritation, and its absence of odor, renders it an admirable substitute for chrysophanic acid and oil of Cade in diseases affecting the scalp and face.

16. That while its effect in psoriasis is slower and less brilliant than that of chrysophanic acid, its range of therapeutical action is much more extended. It causes to disappear the nodosities of lupus, the hyperplasias of syphilis, epidermic and papillary hypertrophies, and seems to have a good effect in promoting the cicatrization of wounds.

17. That it seems to act by virtue of its stimulant and irritating properties, it hardens and shrinks the tissues, shrivels up unhealthy granulations, and acts as a hæmostatic.—*Journ. of Cutaneous and Venereal Diseases*, Nov. 1882.

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The Absorption of Certain Salts from the Alimentary Canal.

In a series of papers on the Action of Saline Cathartics, which are at present appearing in the *Journal of Anatomy and Physiology*, by MATTHEW HAY, M.D., was drawn attention to a remarkable peculiarity in the absorption of sulphate of soda from the alimentary canal. He there states (vol. xvi. p. 568), as the result of a number of experiments—in which a purgative dose of the salt was administered to fasting cats, and the animals killed at various intervals afterwards, and the quantity of salt recoverable from the alimentary canal estimated—that, during the first hour after the administration of the purgative, the salt is rapidly absorbed, until nearly one-half of the whole dose (five grammes) disappears from the canal, whilst during the next hour the greater portion of the absorbed salt returns to the canal. The quantity of the salt was estimated from the quantity of sulphuric acid recoverable, which was precipitated in the usual way by means of barium sulphate from an acid solution of the ash of the dried contents of the canal. He has ventured to explain the peculiar course of the salt by suggesting that the rapid absorption occurs in the small intestine, and the excretion in the large intestine. A more detailed explanation will be found in the papers referred to.

Since these experiments were made, he has recently instituted others for the purpose of ascertaining if other purgative salts behave in a like manner to sulphate of soda, and if the base as well as the acid of each salt be similarly absorbed and excreted; for, as mentioned, it was only the acid of the sulphate of soda which he estimated. The other salts employed in the present experiments were the sulphate of magnesia and the phosphate of soda.

The results of the additional experiments with the sulphate of soda showed that, although the acid is rapidly absorbed during the first hour of the action of the salt, the base is not. For example, after the administration of five grammes of sulphate of soda to a cat, which was killed one hour afterwards, there were recovered from the contents of the alimentary canal, mixed with an infusion of the canal-wall, 2.544 grammes of sulphate of soda as reckoned from the sulphuric acid present, and 4.877 grammes of the salt as reckoned from the soda present. Other experiments performed in the same manner yielded like results. If the cat were killed two hours afterwards, nearly four grammes of the salt were recovered, as estimated from the acid, and about four grammes and three-quarters, as estimated from the base. After a longer period, the acid and base gradually became less.

The experiments with sulphate of magnesia yielded much the same results as those with the soda-salt. The acid rapidly disappeared from the canal during the first hour after the administration of the salt, and even to a greater extent than in the case of the sulphate of soda. As also with the latter salt, the acid returned to the canal, but not quite so rapidly as the acid of that salt. At the end of the second hour, there was hardly more of the acid in the canal than there was at the end of the first hour; but, by the completion of the third hour, the quantity had considerably increased. Meanwhile, the base or the magnesia was very gradually undergoing absorption, and never at any time during the first few hours after the administration of the purgative, was there evidence afforded of the base having pursued the same peculiar course of absorption and excretion as did the acid.

In his paper on the Action of Saline Cathartics, he pointed out that one-fourth part or less of a purgative dose of sulphate of magnesia will, when injected into the circulation of a dog or a cat, kill it; and he, at that time, remarked that, if this salt were absorbed into the blood in the same manner and to the same extent as the sulphate of soda, it was very strange that it did not exert its toxic action. He did not then know that the acid was absorbed, whilst the base, for the most part, remained in the canal, or was absorbed only very slowly. The present experiments, therefore, offer a very satisfactory explanation of the difficulty he formerly experienced. The salt is split up in the canal, and the basic or toxic part of it enters the blood very gradually, and not more rapidly than it can be excreted by the kidneys.

The remaining experiments were made with the phosphate of soda, to observe if the phosphoric acid of this salt might behave in the same way as the sulphuric acid of the sulphate. The experiments were only two in number, in one of which the cat was killed after one hour, and in the other at the end of two hours. In both the quantity of phosphoric acid recovered from the alimentary canal and its contents was large, and did not exhibit any evidence of the same primary rapid absorption as of the sulphuric acid. The phosphoric acid was, however, more reduced in quantity than the base, and it is probable that, to a certain extent, the phosphate undergoes decomposition in the canal.

How the splitting-up of the sulphates in the intestines is effected, and in what combination the acid passes into the blood, is beyond the scope of the present communication.—*Brit. Med. Journ.*, Dec. 16, 1882.

Transfusion.

The question of the treatment of cases of excessive loss of blood by means of injections of alkaline solutions of common salt must be held to be well worthy of consideration. Schwarz wrote on the subject in 1881, recommending this method of treatment as a safe and rapid means of saving life, and a review of his book will be found in our pages for December 17, 1881; and he has since made a further contribution to the subject (*Berliner Klinische Wochenschrift*, 1882, No. 35); and in the *Deutsche Medizinal-Zeitung*, No. 46, is an abstract of two cases by Kümmell. The advantages that a simple non-coagulable and easily prepared fluid possesses over even defibrinated blood cannot be too highly estimated: and if, as is maintained, the real want of patients suffering from acute anæmia is not so much blood-disks as blood-pressure, the employment of an ordinary salt solution presents an easily prepared agent ready to hand in all emergencies. It is obvious, however, that a trustworthy conclusion as to the value of the proposed remedy can only be arrived at by its practical employment. Schwarz recommends intravenous injection of the fluid as in ordinary blood-transfusion. In both Kümmell's cases the solution was thrown into the radial artery—*i. e.*, the intra-arterial method of Bischoff. In the first example the transfusion was resorted to for hemorrhage after the operation of nephrectomy; a 6 per cent. solution of chloride of sodium made alkaline by a few drops of caustic soda was injected to the amount of about 160 grammes, at a temperature of about 40° C., and at a pressure of about one metre. The immediate effect was recovery from the collapsed condition, but the patient died the next day in consequence of disease of the other kidney. In the other case, in which the operation was performed on account of acute anæmia due to hemorrhage from a resected knee, about 500 grammes were introduced, the pressure not being measured. The heart was in a weak state. The general effect was all that could be desired, but a swelling in the hand was noted, which was no doubt due to rupture of capillaries by the force of the injection; this swelling diminished, but gangrene of the hand set in, which necessitated amputation of the forearm. In the part cut off, thrombosis of the ulnar artery was found. The mummification was attributed to the combined action of the high pressure at which the fluid was injected, and the cardiac debility, aided by the anatomical arrangement of the vessels in the hand. The author comes to the conclusion that it is better to open the median basilic vein than to use the intra-arterial method. There seems to be some ground for believing that intra-venous injections of solutions of common salt, properly performed, have been occasionally of real life-saving value: or, at least, that enough encouragement has been met with to justify a more extensive trial of this method of treatment.